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10/721,647

11/25/2003

James Henry DeVore

60,446-243;03ZFM049

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EXAMINER

LE, DAVID D

ART UNIT

PAPER NUMBER

3655

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DELIVERY MODE

01/13/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/721,647 | Applicant(s) DEVORE ET AL. | |
| | Examiner David D. Le | Art Unit 3655 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,6,13 and 17-30 is/are pending in the application.
- 4a) Of the above claim(s) 4,20-22 and 24-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,6,13,17-19 and 23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/10/08</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. This is the non-final Office action on the merits of Application No. 10/721,647, filed on 25 November 2003. Claims 1-4, 6, 13, and 17-30 are pending.

Documents

2. The following documents have been received and filed as part of the patent application:

- Information Disclosure Statement, received on 11/25/03
- Replacement drawings, received 07/07/05
- Information Disclosure Statements, received on 11/10/08

Continued Examination Under 37 CFR 1.114

3. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114.

Applicant's submission filed on 13 October 2008 has been entered.

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Election/Restrictions

4. It should be noted that Applicants has elected Specie A, Figures 1 and 2 in the reply filed on 14 March 2005. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

5. Claims 4, 20-22 and 24-30 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Species.

6. It should also be noted that the present independent claims 1, 13 and 17 are no longer generic to all Species; and therefore, the withdrawn claims 4, 20-22 and 24-30 appear to be drawn to mixed embodiments, which are not disclosed in the present specification.

Allowable Subject Matter

7. Prosecution on the merits of this application is reopened, with authorization of Technology Center 3600 Director whose signature is below, on claims 1-4, 6, 13 and 17-20, which are considered unpatentable for the reasons indicated below.

/David J. Bagnell/

Acting Group Director, TC 3600

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Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-3, 6, 13, 17-19 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent No. 6,151,978 to Huber (hereinafter referred to as Huber'978) in view of U. S. Patent No. 4,485,443 to Knodler et al. (hereinafter referred to as Knodler).

Note:

It should be noticed that **Huber'978**, column 3, lines 27-31, states, "This invention preferably includes the method that is disclosed in the copending U.S. patent application Ser. No. 08/988,465, which was filed on Dec. 10, 1997. The teachings of that application are incorporated into this specification by reference." The U.S. patent application Ser. No. 08/988,465, filed on Dec. 10, 1997, is now the U. S. Patent No. 6,167,996 to Huber et al. (Huber'996).

Huber'978 (Fig. 1; column 1, line 66 – column 6, line 4) discloses a shift by wire vehicle transmission comprising:

With Respect to Claim 1:

- An automated mechanical transmission (14) shiftable between a first and a second gear ratio;

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- A first component (16);
- A second component (20) movable relative the first component (16);
- A first sensor (40) adjacent the first component;
- A second sensor (42) adjacent the second component;
- A controller (32) in communication with the first sensor (40) and the second sensor (42), the controller operable to determine a clutch closed condition by determining a rotational speed difference, between the first component (16) and the second component (20), being less than a preselected value (i.e., column 3, line 66 – column 4, line 2 of **Huber'996**), which is indicative of an approximately zero torque condition, to initiate a shift between the first and the second gear ratio (i.e., column 2, line 56 – column 3, line 31 of **Huber'978**; and i.e., column 3, line 27 – column 4, line 2 of **Huber'996**).

With Respect to Claim 2:

- Wherein the first and second sensors are speed sensors (i.e., column 3, lines 21-26).

With Respect to Claim 3:

- Wherein the controller identifies a speed irregularity signature generated by the first and second sensor (i.e., column 2, line 56 – column 3, line 31 of **Huber'978**; and i.e., column 3, line 27 – column 4, line 2 of **Huber'996**; being the speed difference between a rotational speed of the first rotational component (16) and a rotational speed of the second rotational component (20) which causes zero torque condition has not been achieved).

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With Respect to Claims 6 and 23:

- Wherein the first component is a transmission input shaft (16) and the second component is a transmission output shaft (20).

With Respect to Claim 13:

A method of controlling a vehicle transmission comprising the steps of:

- (1) determining a speed difference between a first rotational component (16) and a second rotational component (20) (i.e., column 2, line 56 – column 3, line 31 of **Huber’978**; and i.e., column 3, line 27 – column 4, line 2 of **Huber’996**);
- (2) relating the speed difference of the step (1) to an approximately zero torque condition (i.e., column 2, line 56 – column 3, line 31 of **Huber’978**; and i.e., column 3, line 27 – column 4, line 2 of **Huber’996**); and
- (3) shifting the vehicle transmission between a first and second gear ratio in response to identification of the approximately zero torque condition (i.e., column 2, line 56 – column 3, line 31 of **Huber’978**; and i.e., column 3, line 27 – column 4, line 2 of **Huber’996**).

With Respect to Claim 17:

A method of controlling a vehicle transmission comprising the steps of:

- (1) determining a speed irregularity between a first rotational component (16) and a second rotational component (20) (i.e., column 2, line 56 – column 3, line 31 of **Huber’978**; and i.e., column 3, line 27 – column 4, line 2 of **Huber’996**, being a speed difference between a rotational speed of the first rotational component and a rotational speed of the second rotational component);

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(2) relating the speed irregularity of the step (1) to an approximately zero torque condition (i.e., column 2, line 56 – column 3, line 31 of **Huber'978**; and i.e., column 3, line 27 – column 4, line 2 of **Huber'996**); and

(3) shifting the vehicle transmission between a first and second gear ratio in response to identification of the approximately zero torque condition (i.e., column 2, line 56 – column 3, line 31 of **Huber'978**; and i.e., column 3, line 27 – column 4, line 2 of **Huber'996**).

With Respect to Claim 18:

- Wherein the first rotational component and the second rotational component are connected to a gear interface (i.e., **Huber'978**, Fig.1, element 18) such that the second rotational component rotates relative to the first rotational component through the gear interface (18).

With Respect to Claim 19:

- Wherein the speed difference includes a predetermined signature between the first rotational component and the second rotational component (i.e., column 3, line 59 – column 4, line 2 of **Huber'996**, being the preselected value).

Huber'978 does not explicitly disclose:

- Wherein the controller is operable to determine *a relative movement* between the first component and the second component indicative of an approximately zero torque condition to initiate a shift between the first and the second gear ratio.

Knodler (Figs. 1-3; column 1, line 61 – column 7, line 58) discloses a torque control system for automatic speed changer shiftable under load comprising:

- An automated mechanical transmission (i.e., Fig. 1, element G) shiftable between a first and a second gear ratio;
- A first component (i.e., Fig. 1, element G₁);
- A second component (i.e., Fig. 1, element G₂) movable relative the first component (G₁);
- A first sensor (i.e., Fig. 1, element g₁) adjacent the first component;
- A second sensor (i.e., Fig. 1, element g₂) adjacent the second component;
- A controller (i.e., Fig. 1, being the combination of elements W, A₁, A₂, A₃, A₄ and CO) in communication with the first sensor (g₁) and the second sensor (g₂), the controller operable to determine a relative movement (i.e., column 3, lines 3-43, being the relative speed) between the first component (g₁) and the second component (g₂) indicative of an approximately zero torque condition (i.e., Fig. 2, when Δn is zero) to initiate a shift between the first and the second gear ratio.

Since all the claimed elements were known in the prior art, one skilled in the art could have modified Huber'978, such that the controller is in communication with the first sensor and the second sensor, the controller operable to determine a relative movement between the first component and the second component indicative of an approximately zero torque condition to initiate a shift between the first and the second gear ratio, as claimed by known methods with no change in their respective functions,

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and the modification would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David D. Le whose telephone number is 571-272-7092. The examiner can normally be reached on Mon-Fri (0900-1730).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles A. Marmor can be reached on 571-272-7095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David D. Le/
Primary Examiner, Art Unit 3655
01/06/2009

ddl